What is claimed is:

1. A flow cell for directed molecular interaction in conjunction with analyte assays comprising:

a fluid path having one or more fluidic conduits;

an analyte detection chamber disposed along the fluid path having at least one interior surface adapted for derivatization; and

a directed molecular interaction bias generator, in fluidic communication with the analyte detection chamber, adapted to generate a bias across the chamber sufficient to move a desired analyte into a region proximate to the interior surface adapted for derivatization.

2. The flow cell of claim 1 wherein the interior surface adapted for derivatization is a surface plasmon resonance detector.

3. The flow cell of claim 2 wherein the surface adapted for derivatization is a surface plasmon resonance layer in optic communication with an integrally formed surface plasmon resonance sensor.

4. The flow cell of claim 3 wherein the bias generator is electrical.

5. The flow cell of claim 4 further comprising a thermister in fluidic communication with the analyte detection chamber.

6. The flow cell of claim 2 wherein the bias generator is magnetic.

7. The flow cell of claim 6 further comprising a thermister in fluidic communication with the analyte detection chamber.

8. A sample delivery and sensing unit for directed molecular interaction during surface plasmon resonance analysis comprising:

an integrally formed surface plasmon resonance sensor having, in fixed disposition thereto, a housing transparent to a given frequency of light, a source of the given frequency of light, a mirror and a photodetector array;

a surface plasmon resonance layer in optic communication with the integrally formed surface plasmon resonance sensor; and

a flow cell adapted for attachment to the surface plasmon resonance layer, having a fluid path, an analyte detection chamber disposed along the fluid path and having an interior surface in fluidic communication with the surface plasmon resonance layer, and adapted for generation of a molecular interaction bias across the chamber.

9. The unit of claim 8 wherein the molecular interaction bias is electrical.

10. The unit of claim 8 wherein the molecular interaction bias is magnetic.

11. A sample delivery and sensing unit for directed molecular interaction during surface plasmon resonance analysis comprising:

an integrally formed surface plasmon sensor having, in fixed functional geometric alignment thereto, a housing transparent to electromagnetic radiation of a given frequency range, a source of electromagnetic radiation having the given frequency range, a photodetector array disposed adjacent the surface of the housing and substantially coplanar with the source, such that radiation from the source reflects off the surface and strikes the photodetector array;

a thin surface plasmon resonance layer in optic communication with an exterior surface of the integrally formed surface plasmon resonance sensor; and

an analyte detection chamber in fluidic communication with the surface plasmon resonance layer, adapted to generate a molecular interaction bias across the analyte detection chamber to direct bias responsive conjugated molecules to the surface plasmon resonance layer.

12. The unit of claim 11 wherein the molecular interaction bias across the analyte detection chamber is electrical.

13. The unit of claim 11 wherein the molecular interaction bias across the analyte detection chamber is magnetic.

14. A method for kinetically controlled surface plasmon resonance analysis comprising:

providing a surface plasmon resonance sensor having a surface plasmon layer in optical communication with the sensor;

derivatizing the surface plasmon layer;

placing an analyte detection chamber in fluidic communication with the derivatized surface plasmon layer, wherein the chamber is adapted to generate a molecular interaction bias across the chamber;

providing a conjugate between an analyte and a bias responsive moiety, wherein the analyte is reactive with the derivatized surface plasmon layer and the bias responsive moiety changes the response of the analyte to the molecular interaction bias;

introducing the conjugated analyte into the chamber;

generating the molecular interaction bias; and

determining changes in surface plasmon resonance due to association of the conjugated analyte to the derivatized surface plasmon layer.

15. The method of claim 14 wherein the molecular interaction bias is electrical.

16. The method of claim 14 wherein the molecular interaction bias is magnetic.

17. A sample delivery and sensing apparatus adapted for performing the method of claim 15.

18. A sample delivery and sensing apparatus adapted for performing the method of claim 16.

19. The method of claim 14 wherein the conjugated analyte is adapted for the kinetically enhanced measurement of molecular interactions in the groups consisting of: avidin-biotin binding, antibody-antigen binding, antibody-antigen dissociation kinetics, protein binding, protein-nucleic acid binding, specific detection of small molecules, concentrations of analytes, measurement of oligonucleotide complements, mixture proportions, receptor-ligand interactions, aptamer interactions, and molecular assembly events.

20. The method of claim 19 wherein the conjugated analyte is adapted for the kinetically enhanced measurement of molecular interactions in competitive binding assays.